

REMARKS/ARGUMENTS

Reconsideration and withdrawal of the rejections of the present application are respectfully requested in view of the amendments and remarks presented herewith. The present amendment is being made to facilitate prosecution of the application.

I. STATUS OF THE CLAIMS AND FORMAL MATTERS

Claims 26-56 are currently pending in this application. By this paper, claims 26, 27, and 42 are being amended. Claims 40, 41, 44, and 49 are hereby cancelled without prejudice, without admission, without surrender of subject matter, and without any intention of creating any estoppel as to equivalents. No new matter has been introduced by this amendment. Support for the amended recitations can be found throughout the specification as originally filed, e.g. Fig. 4, and paragraphs [0022], [0031] and [0035] of the application as published.

The amendments as presented herein are not made for the purposes of patentability within the meaning of §§§§101, 102, 103, and 112. Rather, these amendments are made for purposes of clarity, to place the application into condition for allowance, and to round out the scope of protection to which Applicants are entitled.

II. REJECTIONS UNDER 35 U.S.C. §§ 102(b) & 103(a)

Claims 26-35, 39-42, and 44-56 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,360,656 to Rexfelt et al. (hereinafter merely “Rexfelt”).

Claim 26 recites:

“An industrial textile structure comprising:

an array of spiral wound machine direction (MD) yarns
forming a system having a defined width; and
a pattern of cross machine direction (CD) elements
deposited onto said system of MD yarns;
wherein said CD elements are formed while being
deposited onto said system of MD yarns, and wherein said CD
elements at least partially encapsulate said MD yarns.”
(Emphasis added)

Rexfelt relates to a press felt including a base fabric which is made of spirally-wound strips of a fabric having a width which is smaller than the width of the final base fabric. The fabric strips are flat-woven.

As recited in instant claim 26, the industrial textile structure, according to one embodiment of the present invention, includes an array of spiral wound machine direction (MD) yarns, and a pattern of cross machine direction (CD) elements deposited onto the system of MD yarns. It should, however, be noted that these CD elements are formed while being deposited onto the system of MD yarns, and the CD elements at least partially encapsulate the MD yarns, as recited in claim 26.

Applicant respectfully submits that Rexfelt does not teach or suggest the structure as claimed in claim 26. More specifically, the textile structure produced by Rexfelt's method differs from the instant textile structure, in that Rexfelt's structure is made of spirally-wound strips of a fabric having a width which is smaller than the width of the final base fabric, while the instant structure has an array of spiral wound machine direction (MD) yarns.

Rexfelt discloses that:

“Each longitudinal thread (warp thread) 22 of the strip 20 makes an angle α with the machine direction MD of the fabric/press felt. These oblique longitudinal threads 22 run uninterrupted through the entire base fabric layer, whilst the cross threads (weft threads) 24 are interrupted and each have a length w .” (col. 4, l. 63-col. 5, l. 1.)

However, Rexfelt also discloses that:

“The flat-woven strip 20 has in known manner two mutually orthogonal thread systems consisting of longitudinal threads (warp threads) and cross threads (weft threads) schematically represented in FIG. 1 at 22 and 24, respectively.” (col. 4, l. 28-col. 5, l. 32 – Emphasis added)

Accordingly, Rexfelt teaches that the warp threads within the flat-woven fabric strip 20 run uninterrupted because the entire base fabric layer is formed by spirally winding strips of the flat-woven fabric. However, Rexfelt does not teach or suggest an array of spiral wound MD yarns, as recited in instant claim 26.

Additionally, the cross threads (weft threads) 24 in Rexfelt are interrupted and each have a length w. However, there is no teaching or suggestion in Rexfelt for formation of CD elements while being deposited onto the system of MD yarns, as recited in instant claim 26. Furthermore, there is no teaching or suggestion in Rexfelt that the CD elements deposited onto the system of MD yarns at least partially encapsulate the MD yarns, as recited in instant claim 26.

For at least the foregoing reasons, Applicant respectfully submits that instant claim 26 is patentable over Rexfelt.

Additionally, claims 27-35, 39-42, and 44-56 that directly or indirectly depend from claim 1 are patentable. Indeed, Rexfelt does not teach or suggest the particular combinations of claims 27-35, 39-42, and 44-56 with claim 26. For instance:

Rexfelt fails to teach or suggest the invention as claimed in claim 27. Specifically, Rexfelt does not teach or suggest a textile structure as claimed in claim 26, wherein the CD elements connect the MD yarns so as to fix their position and stabilize the structure.

Rexfelt fails to teach or suggest the invention as claimed in claim 28.

Specifically, Rexfelt does not teach or suggest a textile structure as claimed in claim 26, wherein the MD yarns are intermittently encapsulated by the CD elements along the length of the MD yarns.

Rexfelt fails to teach or suggest the invention as claimed in claim 29.

Specifically, Rexfelt does not teach or suggest a textile structure as claimed in claim 26, wherein the CD elements extend the full width of the MD yarn system.

Rexfelt fails to teach or suggest the invention as claimed in claim 30.

Specifically, Rexfelt does not teach or suggest a textile structure as claimed in claim 26, wherein the CD elements extend the full width of the MD yarn system.

Rexfelt fails to teach or suggest the invention as claimed in claim 31.

Specifically, Rexfelt does not teach or suggest a textile structure as claimed in claim 26, wherein the CD elements are created on the MD yarn system by depositing a polymer resin orthogonally thereto on one or both surfaces thereof so to obtain a system of CD elements interlocking with the MD yarns.

Rexfelt fails to teach or suggest the invention as claimed in claim 32.

Specifically, Rexfelt does not teach or suggest a textile structure as claimed in claim 31, wherein the pattern created on the MD yarn system is varied by controlling the deposition of the polymer thereon.

Rexfelt fails to teach or suggest the invention as claimed in claim 33.

Specifically, Rexfelt does not teach or suggest a textile structure as claimed in claim 32, wherein a speed of the deposition is controlled so as to adjust the amount of polymer on the MD yarn system.

Rexfelt fails to teach or suggest the invention as claimed in claim 34.

Specifically, Rexfelt does not teach or suggest a textile structure as claimed in claim 31, wherein the polymer is delivered using one or more dispensers.

Rexfelt fails to teach or suggest the invention as claimed in claim 35.

Specifically, Rexfelt does not teach or suggest a textile structure as claimed in claim 31, wherein the polymer is delivered to both surfaces of the MD yarn system so to join and bond the MD yarn system therebetween.

Rexfelt fails to teach or suggest the invention as claimed in claim 39.

Specifically, Rexfelt does not teach or suggest a textile structure claimed in claim 38, wherein the molten polymer is derived by melting monofilament used as feedstock.

Rexfelt fails to teach or suggest the invention as claimed in claim 42.

Specifically, Rexfelt does not teach or suggest a textile structure as claimed in claim 26, wherein the CD monofilaments are a polymer able to be bond whilst maintaining its functional strength.

Rexfelt fails to teach or suggest the invention as claimed in claim 45.

Specifically, Rexfelt does not teach or suggest a textile structure claimed in claim 26, wherein the textile structure formed is machine seamable or endless.

Rexfelt fails to teach or suggest the invention as claimed in claim 46.

Specifically, Rexfelt does not teach or suggest a textile structure claimed in claim 26, wherein the textile structure formed is a forming, press, dryer, TAD, pulp forming, sludge filter, chemiwasher, or engineered fabric.

Rexfelt fails to teach or suggest the invention as claimed in claim 47.

Specifically, Rexfelt does not teach or suggest a textile structure claimed in claim 26, wherein the MD yarns are capable of being infinitely spaced apart or close together.

Rexfelt fails to teach or suggest the invention as claimed in claim 48.

Specifically, Rexfelt does not teach or suggest a textile structure claimed in claim 26, wherein the CD elements contribute to fabric stability and other functional characteristics such as permeability to air and/or water, structural void volume or caliper.

Rexfelt fails to teach or suggest the invention as claimed in claim 50.

Specifically, Rexfelt does not teach or suggest a textile structure claimed in claim 26, wherein the CD elements acts as shute runners on a wear side of the structure, protecting the MD yarns.

Rexfelt fails to teach or suggest the invention as claimed in claim 51.

Specifically, Rexfelt does not teach or suggest a textile structure claimed in claim 26, wherein high abrasion resistant polymers are used as the CD element material.

Rexfelt fails to teach or suggest the invention as claimed in claim 52.

Specifically, Rexfelt does not teach or suggest a textile structure claimed in claim 26, wherein a layer of batt is affixed to one or both sides of the structure.

Rexfelt fails to teach or suggest the invention as claimed in claim 53.

Specifically, Rexfelt does not teach or suggest a textile structure claimed in claim 26, wherein one or more nonwoven layers are laminated to the textile structure with or without batt.

Rexfelt fails to teach or suggest the invention as claimed in claim 54.

Specifically, Rexfelt does not teach or suggest a textile structure claimed in claim 26, wherein the textile structure is permeable.

Rexfelt fails to teach or suggest the invention as claimed in claim 55.

Specifically, Rexfelt does not teach or suggest a textile structure claimed in claim 26, wherein the textile structure has a smooth sheet contact side.

Rexfelt fails to teach or suggest the invention as claimed in claim 56.

Specifically, Rexfelt does not teach or suggest a textile structure claimed in claim 26, which includes a resin coating rendering the textile structure impermeable.

Claims 26-56 were also rejected under 35 U.S.C. §102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being obvious over now U.S. Patent 6,491,794 to Davenport (hereinafter merely "Davenport").

Claim 26 recites:

"An industrial textile structure comprising:
an array of spiral wound machine direction (MD) yarns
forming a system having a defined width; and
a pattern of cross machine direction (CD) elements
deposited onto said system of MD yarns;
wherein said CD elements are formed while being
deposited onto said system of MD yarns, and wherein said CD
elements at least partially encapsulate said MD yarns."
(Emphasis added)

Davenport relates to an on-machine-seamable papermaker's fabric having a base structure which is a flattened array of a spirally wound multicomponent yarn. The flattened array has two layers, two sides, a length, a width and two widthwise edges. In each turn of the spiral winding, the multicomponent yarn has a substantially lengthwise orientation and is joined side-by-side to those adjacent thereto by a fusible thermoplastic material in each of the two layers. The multicomponent yarn forms seaming loops along the two widthwise edges.

As recited in instant claim 26, the industrial textile structure, according to one embodiment of the present invention, includes an array of spiral wound machine direction (MD) yarns, and a pattern of cross machine direction (CD) elements deposited onto the system of MD yarns. It should, however, be noted that these CD elements are formed while being deposited

onto the system of MD yarns, and the CD elements at least partially encapsulate the MD yarns, as recited in claim 26.

Applicant respectfully submits that Davenport does not teach or suggest the structure as claimed in claim 26. More specifically, the structure in Davenport differs from the instant textile structure, in that Davenport's structure does not have a CD component, such as the instant CD elements.

Davenport discloses that:

"Within the thin strips of insulating material 26, the spirally wound multicomponent yarn 16 forms a series of loops. Every other loop 34 is shorter than those on either side, loops 36, because the first roll 12 and second roll 14 were grooved, the shorter loops 34 resulting from those turns of multicomponent yarn 16 which were disposed in grooves 22. The longer loops 36 result from those turns of multicomponent yarn 16 which resided on land areas 24." (col. 7, l. 6-14)

Davenport further discloses that:

"The flattened array 30 of bonded multicomponent yarns 16 is then folded and the two ends 32 brought together. Thin strips of insulating material 26 are peeled back to expose loops 34, 36 and loops 36 of the two ends 32 are interdigitated with one another. Pintle 38 is then directed through the passage formed by the interdigitated loops 36 to join ends 32 to one another at seam 40, as shown in FIG. 6." (col. 7, l. 15-21)

However, Davenport also discloses that:

"There are no cross-machine-direction (CD) yarns to unravel to form the loops required for seaming, yet the base structure has CD stability because the machine-direction (MD) yarns are bonded side-by-side to one another." (col. 9, l. 7-11 – Emphasis added)

Accordingly, there are no CD components to unravel to form the loops required for seaming in Davenport, and the base structure in Davenport has CD stability because the MD yarns are bonded side-by-side to one another.

Therefore, Applicant respectfully submits that Davenport does not teach or suggest the structure as claimed in instant claim 26. Specifically, Davenport fails to teach or suggest an industrial textile structure including a pattern of cross machine direction (CD) elements deposited onto said system of MD yarns, wherein said CD elements are formed while being deposited onto said system of MD yarns, and wherein said CD elements at least partially encapsulate said MD yarns, as recited in instant claim 26.

For at least the foregoing reasons, Applicant respectfully submits that instant claim 26 is patentable over Davenport.

Additionally, claims 27-56 that directly or indirectly depend from claim 1 are patentable. Indeed, Davenport does not teach or suggest the particular combinations of claims 27-56 with claim 26. For instance:

Davenport fails to teach or suggest the invention as claimed in claim 27. Specifically, Davenport does not teach or suggest a textile structure as claimed in claim 26, wherein the CD elements connect the MD yarns so as to fix their position and stabilize the structure.

Davenport fails to teach or suggest the invention as claimed in claim 28. Specifically, Davenport does not teach or suggest a textile structure as claimed in claim 26, wherein the MD yarns are intermittently encapsulated by the CD elements along the length of the MD yarns.

Davenport fails to teach or suggest the invention as claimed in claim 29. Specifically, Davenport does not teach or suggest a textile structure as claimed in claim 26, wherein the CD elements extend the full width of the MD yarn system.

Davenport fails to teach or suggest the invention as claimed in claim 30.

Specifically, Davenport does not teach or suggest a textile structure as claimed in claim 26, wherein the CD elements extend the full width of the MD yarn system.

Davenport fails to teach or suggest the invention as claimed in claim 31.

Specifically, Davenport does not teach or suggest a textile structure as claimed in claim 26, wherein the CD elements are created on the MD yarn system by depositing a polymer resin orthogonally thereto on one or both surfaces thereof so to obtain a system of CD elements interlocking with the MD yarns.

Davenport fails to teach or suggest the invention as claimed in claim 32.

Specifically, Davenport does not teach or suggest a textile structure as claimed in claim 31, wherein the pattern created on the MD yarn system is varied by controlling the deposition of the polymer thereon.

Davenport fails to teach or suggest the invention as claimed in claim 33.

Specifically, Davenport does not teach or suggest a textile structure as claimed in claim 32, wherein a speed of the deposition is controlled so as to adjust the amount of polymer on the MD yarn system.

Davenport fails to teach or suggest the invention as claimed in claim 34.

Specifically, Davenport does not teach or suggest a textile structure as claimed in claim 31, wherein the polymer is delivered using one or more dispensers.

Davenport fails to teach or suggest the invention as claimed in claim 35.

Specifically, Davenport does not teach or suggest a textile structure as claimed in claim 31, wherein the polymer is delivered to both surfaces of the MD yarn system so to join and bond the MD yarn system therebetween.

Davenport fails to teach or suggest the invention as claimed in claim 36.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 31, wherein the deposited polymer is curable by one of UV light or heat.

Davenport fails to teach or suggest the invention as claimed in claim 37.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 36, wherein the deposited polymer is subsequently cured to obtain a solid system of CD elements.

Davenport fails to teach or suggest the invention as claimed in claim 38.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 31, wherein the deposited polymer is molten polymer and is subsequently cooled to obtain a solid system of CD elements.

Davenport fails to teach or suggest the invention as claimed in claim 39.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 38, wherein the molten polymer is derived by melting monofilament used as feedstock.

Davenport fails to teach or suggest the invention as claimed in claim 42.

Specifically, Davenport does not teach or suggest a textile structure as claimed in claim 26, wherein the CD monofilaments are a polymer able to be bond whilst maintaining its functional strength.

Davenport fails to teach or suggest the invention as claimed in claim 43.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 42, wherein the polymer is one of MXD6 and poly-m-xylylene adipamide.

Davenport fails to teach or suggest the invention as claimed in claim 45.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 26, wherein the textile structure formed is machine seamable or endless.

Davenport fails to teach or suggest the invention as claimed in claim 46.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 26, wherein the textile structure formed is a forming, press, dryer, TAD, pulp forming, sludge filter, chemiwasher, or engineered fabric.

Davenport fails to teach or suggest the invention as claimed in claim 47.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 26, wherein the MD yarns are capable of being infinitely spaced apart or close together.

Davenport fails to teach or suggest the invention as claimed in claim 48.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 26, wherein the CD elements contribute to fabric stability and other functional characteristics such as permeability to air and/or water, structural void volume or caliper.

Davenport fails to teach or suggest the invention as claimed in claim 50.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 26, wherein the CD elements acts as shute runners on a wear side of the structure, protecting the MD yarns.

Davenport fails to teach or suggest the invention as claimed in claim 51.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 26, wherein high abrasion resistant polymers are used as the CD element material.

Davenport fails to teach or suggest the invention as claimed in claim 52.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 26, wherein a layer of batt is affixed to one or both sides of the structure.

Davenport fails to teach or suggest the invention as claimed in claim 53.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 26, wherein one or more nonwoven layers are laminated to the textile structure with or without batt.

Davenport fails to teach or suggest the invention as claimed in claim 54.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 26, wherein the textile structure is permeable.

Davenport fails to teach or suggest the invention as claimed in claim 55.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 26, wherein the textile structure has a smooth sheet contact side.

Davenport fails to teach or suggest the invention as claimed in claim 56.

Specifically, Davenport does not teach or suggest a textile structure claimed in claim 26, which includes a resin coating rendering the textile structure impermeable.

CONCLUSION

By this Amendment, this application is believed to be in condition for allowance. Favorable reconsideration of the application, withdrawal of the rejections, and prompt issuance of the Notice of Allowance are, therefore, all earnestly solicited.

Please charge any additional fees that may be needed, and credit any overpayment, to our Deposit Account No. 50-0320.

Respectfully submitted,

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